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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,343	11/19/2001	Yoshitaka Sasaki	111159	8520

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EXAMINER
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KLIMOWICZ, WILLIAM JOSEPH

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 10/29/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/988,343

Applicant(s)

SASAKI ET AL.

Examiner

William J. Klimowicz

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 8, 10, 12, 14, 16, 17 and 19-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11, 13, 15 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The external file wrapper of Patent Application Serial Number 09/988,343 indicates that an information disclosure statement was filed April 3, 2002 (Paper No. 6).

The Examiner notes, however, that the application file does not have any prior art reference file copies and is also missing a PTO-1449 form.

The Applicant is requested to clarify if indeed an IDS has been filed, and if so, to please resubmit the references to be considered with a corresponding PTO -1449.

### ***Election/Restrictions***

Applicants' election with traverse of Group I, Species I (product claims and FIGS. 1-25) in Paper No. 8, filed September 2, 2003 is acknowledged.

The Applicants contend that claims 1-7, 9, 11, 13, 15 and 18 are readable on elected Species I and Group I, with claims 1-3, 9, 11 and 18 being generic.

The traversal is on the ground(s) that "the subject matter of all claims 1-30 is sufficiently related that a thorough search for the subject matter of any one group of claims would necessarily encompass a search for the subject matter of the remaining groups ... it is submitted that three species is not an unreasonable number of species to examine." See Paper No. 8, page 1.

This is not found persuasive because the Examiner maintains that the claims are indeed distinct and searching for multiple inventions would impose a serious burden on the Examiner.

Art Unit: 2652

Thus, the Examiner maintains the rejection is proper and commensurate with patent law statutes and current USPTO policy.

The requirement is still deemed proper and is therefore made FINAL.

Claims 8, 10, 12, 14, 16, 17 and 19-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda (JP 08-045220 A).

Art Unit: 2652

As per claim 1, Yoda (JP 08-045220 A) discloses a slider (28) of a magnetic head comprising: a slider main body (28) having: a medium facing surface that faces toward a rotating recording medium (11); an air inflow end (31); and an air outflow end (33); and a magnetic head element (29) disposed near the air outflow end (33) and near the medium facing surface of the slider main body (28), wherein: the medium facing surface has: a first part (34) closer to the air outflow end (33); a second part (32) closer to the air inflow end (31); and a border part (30) between the first part (34) and the second part (32), the second part (32) being slanted against the first part (34) so that the entire medium facing surface has a convex shape bent at the border part (30) - see, e.g., FIGS. 3B and 7.

As per claim 2, wherein the second part (32) slants against a surface of the recording medium (11) so that the air inflow end (31) gets farther from the recording medium (11) than the border part (30) does, while the recording medium (11) is rotating.

As per claim 3, the second part (32) and the surface of the recording medium (11) form an angle of no greater than  $30^\circ$  while the recording medium (11) is rotating. Note that the claims are drawn to the slider, *per se* (see preamble of claim 1) and that the angle of (32) relative to (30) is  $0.83^\circ$  such that when the slider flies above a disc, at least during a portion of the flight, the angle between (32) and the disk (11) remains around  $0.83^\circ$  much less than the claimed  $30^\circ$ . Thus, since the claim is drawn to the slider *per se*, and the slider-disc relationship is met by Yoda (JP 08-045220 A) for at least a part of the slider flying duration, the claim is anticipated.

As per claim 4, the slider main body (28) is in contact with a surface of the recording medium (11) while the recording medium (11) is at rest, and stays away from the surface of the

Art Unit: 2652

recording medium (11) while the recording medium (11) is rotating - FIGS. 2, 3B, etc.

As per claim 5, when the slider main body (28) comes into contact with the surface of the recording medium (11), the border part (30) is the first to make contact with the surface of the recording medium (11) - due to the incline at the rear as seen in FIG. 2.

As per claim 6, when the slider main body (28) takes off from the surface of the recording medium (11), the border part (30) is the last to depart from the surface of the recording medium (11) - since it is the only part in contact with the disc (11).

As per claim 7, the medium facing surface has a concavity/convexity (e.g., the border part (30) protrudes toward the disc surface (11) to form a convexity) for controlling orientation of the slider main body (28) during the rotation of the recording medium (11).

As per claim 9, wherein the first part (34) and the second part (32) form an angle of no greater than  $30^{\circ}$ . The angle of the first part (34) is  $0.1^{\circ}$  and that of the second part (32) is  $0.83^{\circ}$ .

As per claim 1, Yoda (JP 08-045220 A) does not expressly disclose wherein the head (29) is a thin-film magnetic head (and thus a thin film magnetic slider).

Official notice is taken that thin-film magnetic heads used in recording/reproducing apparatuses of the type disclosed by Yoda (JP 08-045220 A) are notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Yoda (JP 08-045220 A) as being a thin-film magnetic head, as is known.

Art Unit: 2652

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the slider of Yoda (JP 08-045220 A) as being a thin-film magnetic head, as is known, in order to provide a conventional thin-film magnetic slider with the advantages espoused by the slider structure of Yoda (JP 08-045220 A) (e.g., to prevent damage to the slider and improve reliability); additionally, it is well known that thin-film magnetic heads can be advantageously produced inexpensively in a batch-yield thin-film deposition process, thus increasing yield and reducing costs.

Claims 11, 13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoda (JP 08-045220 A) in view of Applicants' admitted prior art (e.g., see page 1, line 12 through page 13, line 13 and FIGS. 34A-43 of Applicants' instant specification).

See the description of Yoda (JP 08-045220 A), *supra*.

Additionally, as per claim 18, Yoda (JP 08-045220 A) discloses wherein the length (LB) of a portion of the first part (34) in the direction of air passage, the portion belonging to a substrate portion, is equal to or less than 50% the length of the entire substrate portion (LA + (30) + LB) in the direction of air passage (FIG. 3A and 3B).

With regard to claim 11, Yoda (JP 08-045220 A) does not expressly disclose the structural characteristics of the slider detail, including wherein the slider main body includes: a substrate portion that has a surface facing toward the recording medium and makes a base of the thin-film magnetic head element; and an insulating portion that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element.

Art Unit: 2652

With regard to claim 13, Yoda (JP 08-045220 A) does not expressly disclose the structural characteristics of the slider detail including wherein the slider main body further includes a protection layer that covers the surfaces of the substrate portion and the insulating portion facing toward the recording medium, wherein the protection layer is made of alumina or diamond-like carbon, as per claim 15.

Such slider structure and composition as set forth in claims 11, 13 and 15, however, are well known in the art, e.g., exemplified by the Applicants' admitted prior art.

More concretely, the Applicants' admitted prior art discloses a conventionally known slider wherein the slider main body includes: a substrate portion (101) that has a surface facing toward the recording medium and makes a base of a thin-film magnetic head element (122); and an insulating portion (127) that has a surface facing toward the recording medium and surrounds the thin-film magnetic head element (122) (as per claim 11); wherein the slider main body further includes a protection layer (128) that covers the surfaces of the substrate portion (101) and the insulating portion (127) facing toward a recording medium, wherein the protection layer (128) is made of alumina or diamond-like carbon, as per claim 15 (e.g., see Applicants' specification at page 8, lines 2-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Yoda (JP 08-045220 A) as including the base and insulating portions with a DLC protective coating, as is known in the art, exemplified by Applicants' admitted prior art.

The rationale is as follows: one of ordinary skill in the art would have been motivated to



Art Unit: 2652

provide the slider of Yoda (JP 08-045220 A) as including the base and insulating portions with a DLC protective coating, as is known in the art, exemplified by Applicants' admitted prior art, in order to provide a substrate that is easily processed with a protective insulating film covering the head and a protective film which minimizes wear to the slider-disc interface during start-up and powering down of a disc drive, as exemplified by Applicants' admitted prior art, as is well known in the art.

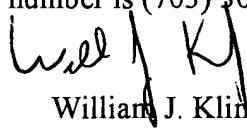
### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (703) 305-3452. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



William J. Klimowicz  
Primary Examiner  
Art Unit 2652

WJK  
October 21, 2003